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Trichomanes radicans

By Elizabeth G. Britton

Having come to the conclusion that *Poterophora Donnellii* Wolle, originally described as a fresh-water alga, is a filamentous prothallium of a species of *Trichomanes*, collected on trunks of trees in Florida by J. Donnell Smith, we have been somewhat surprised to learn that the only record for any species of this genus in Florida is a doubtful one. Chapman, in all three editions of his Southern Flora, states that *T. Petersii* had been sent to him among mosses from Pensacola, Florida, without stating the habitat or name of collector. As the first leaves of both *Vittaria lineata* and *Campyloneuron phyllitidis* might readily be mistaken for a small species of *Trichomanes*, there is some doubt as to whether this statement is correct. No specimens occur in Chapman's original herbarium now in the Columbia University collections, and at Biltmore no further information can be obtained from Chapman's later herbarium. Meanwhile I have made a curious set of discoveries, and confirmed the opinion held by most students of North American ferns that the species known in our text-books as *Trichomanes radicans* is quite distinct from the species originally described by Swartz.

Trichomanes radicans as collected by Swartz was from Jamaica, where it grew closely clinging to trees in the forest, and climbed by a long tomentose rootstock; the fronds were sparse, on stipes 1–3 inches long, margined by the decurrent tissue of the leaf, which is ovate-lanceolate, sub-tripinnate, and dark green. The rachis was partially margined. Leaflets patent, alternate; pinnules alternate, pinnatifid; lobes linear, apex bipartite and obtuse. Urceolate fructification subpedicellate, scarcely exserted, the lobes laciniate, membranous, cylindric. Columella long setaceous.

Compared with *T. scandens* L., he says it differs in the place where it was found, the angular rachis, which is not black; the laciniate ends of the lobes not bifid, and the shorter columella.

This comparison raises the question as to what *T. scandens* L. is, and here too we find a diversity of opinion, most authors having followed the English school in taking as the type the specimen in the Linnaean herbarium; whereas the Germans have gone to the original plates cited by Linnaeus, of pre-Linnaean authors, and taken that as the type.

The Linnaean description is as follows:

8. TRICHOMANES *scandens* frondibus supradecompositis; foliolis alternis, pinnis alternis oblongis serratis.

"Adiantum scandens ramosissimum, laciniss retusis dissectum." Plum. fil., 76 t., 93. 1705.

"Darea ramosissima scandens." Pet. fil., 102, t. 12, fig. 5. 1712. Habitat in America.

If the type is Plumier's figure on plate 93, of his Tractatus Filicibus Americanus, 1705, it must be noted that this is a folio volume and the rhizome and part of one frond only is figured, yet it more than filled the plate with the upper part omitted, and the stipe of one frond is over a foot long, so that the fronds must have been two and a half feet long, with pinnae six to eight inches long, pinnate-pinnatifid, with linear lobes. In his description he says the rhizome is very long and stout, and that it is completely covered with dark fibers which cling closely to the bark of trees, like the ivy. The whole plant is remarkable for its great spread, being very long and branching, and giving rise to a great number of leaves, alternating on the stem, which, though delicate, are nevertheless stout; the stipes are naked, black and shining like ebony, and about as long as the leaf; the pinnae are alternate, about half a foot long, with alternate pinnules, which are about one inch long and are deeply cut into narrow, linear lobes, bearing the cup-shaped sporangia, with a membranous lid and the black bristle about a line long.

The type locality is south of Leogano, Santo Domingo, in dense forests climbing on trunks of trees.

The second Linnaean reference to Petiver's Pteridographia is simply a copy of a portion of Plumier's plate with the descriptive phrase cited by Linnaeus.

Hooker and Baker, in the Synopsis Filicum state that "Van den Bosch refers *T. scandens* L. to *T. Kunzeanum* Hook., "but that *T. scandens* of the Linnaean herbarium is described by them on another page." They recognize *T. Kunzeanum* as a variety of

T. radicans. We feel that the plant of the Linnaean herbarium should be restudied, as well as the type of *T. radicans*, which must be at Stockholm. This would probably necessitate the study of all the species which have been reduced to synonyms of one or the other, such as *T. macroclados* Kunze, *T. Lindeni* Presl, *T. Mexicanum* V. d. B., etc. For it is quite certain that the specimens in our collection which have come from various sources, include a great jumble of species from the West Indies, Central and South America and the United States. Hooker and Baker say that *T. radicans* is a "very widely diffused and variable plant,"—and from the list of localities cited by them we do not doubt this would be true of their specimens so-called.

It is quite certain, however, that our species from the Southern States is quite distinct, in spite of the fact that Eaton in his Ferns of North America says "the name proposed by Sturm, and published with a long description by Van den Bosch, is wholly superfluous." We feel that he is mistaken, and that it must be known as *Trichomanes Boschianum* Sturm. (Van den Bosch. Syn. Hymen. 160. 1868.)

This was recognized by Salomon in his nomenclator of the vascular cryptogams in 1883, but such has been the conservatism of North American botanists, that since Dr. Gray in 1852 referred the species discovered by Peters to *T. radicans*, it has gone by this name in spite of the fact that it is totally unlike any other specimens so-called.